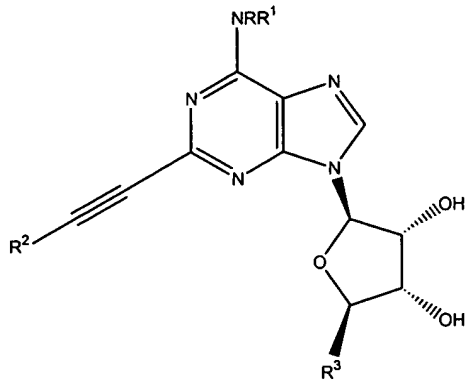
WHAT IS CLAIMED IS:

1. A compound of the formula:




wherein:

R is hydrogen or lower alkyl;

$R^1$ is optionally substituted lower alkoxy or optionally substituted cycloalkyloxy;

$R^2$ is hydrogen, optionally substituted alkyl, optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl, or trialkylsilyl; and

$R^3$ is hydroxymethyl or $R^4R^5NC(O)$-, where $R^4$ and $R^5$ are independently chosen from hydrogen, optionally substituted alkyl or optionally substituted cycloalkyl.

2. The compound of claim 1, wherein $R^3$ is hydroxymethyl.

3. The compound of claim 2, wherein R is hydrogen.

4. The compound of claim 3, wherein $R^1$ is methoxy, ethoxy, n-propoxy, isopropoxy, or cyclopropoxy.

5. The compound of claim 4, wherein $R^1$ is methoxy.

6. The compound of claim 5, wherein $R^2$ is phenyl, namely (4S,2R,3R,5R)-5-(hydroxymethyl)-2-[6-(methoxyamino)-2-(2-phenylethynyl)purin-9-yl]oxolane-3,4-diol.

7. The compound of claim 5, wherein $R^2$ is 4-methylphenyl, namely (4S,2R,3R,5R)-5-hydroxymethyl)-2-[6-(methoxyamino)-2-[(2(4-methylphenyl)ethynyl]purin-9-yl]oxolane-3,4-diol.

8. The compound of claim 5, wherein $R^2$ is 4-fluorophenyl, namely (4S,2R,3R,5R)-2-{2-[2-4-fluorophenyl)ethynyl}-6-(methoxyamino)purin-9-yl}-5-(hydroxymethyl)oxolane-3,4-diol.

9. The compound of claim 5, wherein $R^2$ is 4-pentylphenyl, namely (4S,2R,3R,5R)-5-hydroxymethyl)-2-{6-(methoxyamino2-[2-(4-pentylphenylethynyl])purin-9-yl}oxolane-3,4-diol.

10. The compound of claim 5, wherein $R^2$ is 3-trifluromethylphenyl, namely, (4S,2R,3R,5R) -5-(hydroxymethyl)-2-[6-(methoxyamino)-2-[(2(3-trifluoromethy)-lphenyl]ethynl]purin-9-yl]oxolane-3,4-diol.

11. The compound of claim 5, wherein $R^2$ is 4-methoxyphenyl, namely (4S,2R,3R,5R)-5-(hydroxymethyl)-2-[6-(methoxyamino)-2-[(2(4-methoxyphenyl)ethynyl]purin-9-yl]oxolane-3,4-diol.

12. The compound of claim 5, wherein $R^2$ is 4-cyanomethylphenyl, namely 6-{9-2-[4-(2-{9-[4S,2R,3R,5R)-3,4-dihydroxy-5-(hydroxymethyl)oxolan-2-yl]-6-(methoxyamino)-purin-2-yl}ethynyl)phenyl]ethanenitrile.

13. The compound of claim 5, wherein $R^2$ is 4-acetylphenyl, namely, 1-[4-(2-{9 (4S,2R,3R,5R)-3-4-dihydroxy-5-(hydroxymethyl) oxolane-2-yl}ethynyl)phenyl]ethan-1-one.

14. The compound of claim 5, wherein $R^2$ is butyl, namely (4S,2R,3R,5R)-2-{2-[2-hex-1-ynyl-6-methoxyamino)purin-9-yl}-5-(hydroxymethyl)oxolane-3,4-diol.

15. The compound of claim 5, wherein $R^2$ is 2-hydroxypropyl, namely (4S,2R,3R,5R)-5-(hydroxymethyl)-2-[-2-(4-hydroxypent-1-ynyl)-6-(methoxyamino) purin-9-yl}-5-(hydroxymethyl)oxolane-3,4-diol.

16. The compound of claim 5, wherein $R^2$ is 2-hydroxycyclohexyl, namely (4S,2R,3R,5R)-5-(hydroxymethyl)-2-[-2-(2-hydroxycyclohexyl-1-ynyl)-6-(methoxyamino) purin-9-yl}-5-(hydroxymethyl)oxolane-3,4-diol.

17. The compound of claim 5, wherein $R^2$ is 2-pyridyl, namely (4S,2R,3R,5R)-5-(hydroxymethyl)-2-[6-(methoxyamino)-2-[(2-(2-pyridyl)ethynl) purin-9-yl]oxolane-3,4-diol.

18. The compound of claim 1, wherein $R^3$ is $R^4R^5NC(O)$-.

19. The compound of claim 18, wherein R is hydrogen.

20. The compound of claim 19, wherein $R^1$ is methoxy.

21. The compound of claim 20, wherein $R^4$ is hydrogen and $R^5$ is methyl or ethyl.

22. The compound of claim 21, wherein $R^2$ is optionally substituted phenyl or optionally substituted pyridyl.

23. The compound of claim 22, wherein $R^2$ is phenyl, 4-methylphenyl, 4-fluorophenyl, 3-trifluoromethylphenyl, 4-methoxyphenyl, 2-pyridyl, 3-pyridyl, or 4-pyridyl.

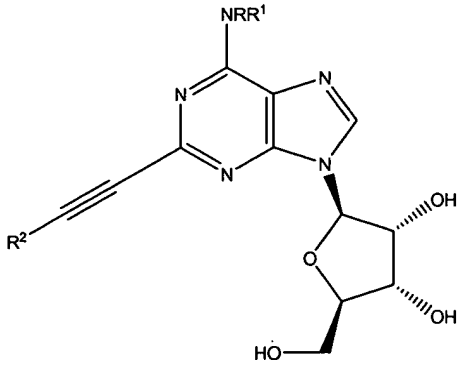
24. A method of treating a disease state by stimulating adenosine $A_3$ receptors, comprising administering to a mammal in need thereof a therapeutically effective dose of a compound of claim 1.

25. The method of claim 24, wherein the disease state is cancer.

26. The method of claim 24, wherein the disease state is neutropenia.

27. A pharmaceutical composition comprising at least one pharmaceutically acceptable excipient and a therapeutically effective amount of a compound of claim 1.

28. A process for preparing a compound of the formula:




wherein:

R is hydrogen or lower alkyl;

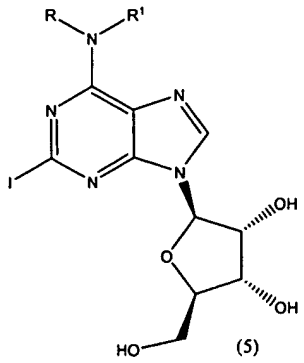
$R^1$ is optionally substituted lower alkoxy or optionally substituted cycloalkyloxy;

$R^2$ is hydrogen, optionally substituted alkyl, optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl, or trialkylsilyl; and

$R^3$ is hydroxymethyl or $R^4R^5NC(O)$-, where $R^4$ and $R^5$ are independently chosen from hydrogen, optionally substituted alkyl or optionally substituted cycloalkyl;

comprising:

contacting a compound of the formula




(5)

with an amine of the formula $RR^1NH$
wherein R and $R^1$ are as defined above.

29. The process of claim 28, wherein the reaction is conducted in tetrahydrofuran at room temperature for about 4 days.

30. The process of claim 29, wherein the reaction is conducted in the presence of a base.

31. The process of claim 30, wherein the base is triethylamine.